GefenPRO

1080P PROGRESSIVE

dvi digital visual interface

32x32 DVI Matrix

GEF-DVI-32432
User Manual

www.gefenpro.com

ASKING FOR ASSISTANCE

Technical Support:
Telephone (818) 772-9100
(800) 545-6900

Fax (818) 772-9120

Technical Support Hours:
8:00 AM to 5:00 PM Monday through Friday, Pacific Time

Write To:

Gefen, LLC
c/o Customer Service
20600 Nordhoff St
Chatsworth, CA 91311

www.gefenpro.com
support@gefenpro.com

Notice

Gefen LLC reserves the right to make changes in the hardware, packaging and any accompanying documentation without prior written notice.

32x32 DVI Matrix is a trademark of Gefen LLC

© 2012 Gefen, LLC. All rights reserved.

All trademarks are the property of their respective owners.

Rev A2

CONTENTS

1 Introduction
2 Operation Notes
3 Features
4 Front Panel Layout
5 Front Panel Descriptions
6 Back Panel Layout
7 Back Panel Descriptions
8 Connecting the 32x32 DVI Matrix
8 Wiring Diagram
9 Operating the 32x32 DVI Matrix
9 Main Display
9 Displaying Additional Information
10 Displaying the Current Routing State
11 Mode Buttons
11 Routing Sources
13 System Lock Mode
14 Cancelling a Function
15 Cycling between Information Screens
16 Saving the current Routing State
18 Recalling a stored Routing State
20 Masking Outputs
22 EDID Management
22 Saving the Downstream EDID data to Local memory
24 Saving the Default EDID to Local memory
26 RS-232 Control
26 RS-232 Settings
26 Telnet Settings
27 RS-232 Commands
27 EDID Management
32 IP Configuration
36 General
40 Routing
43 Rack Mount Safety Information
44 Specifications
45 Warranty
46 Licensing

INTRODUCTION

Congratulations on your purchase of the 32x32 DVI Matrix. Your complete satisfaction is very important to us.

GefenPRO

In the realm of video distribution, certain features are invaluable in a commercial or broadcast environment. Accommodations such as a build-in power supply and flat black rack-mount enclosures set GefenPRO apart from our traditional products. Complex distribution units allow for professional DVI, 3G-SDI, and HDMI signals to be routed and converted easily and seamlessly, while being backed up by a renowned and dependable technical support team. Gefen invites you to explore the GefenPRO product line and hopes that you find the solution that fits your needs.

The Gefen 32x32 DVI Matrix

The GefenPRO 32x32 DVI Matrix is a modular design for professionals. Each input can route different resolutions at any time to any display by switching from the included IR Remote, IP control, RS-232, or by using the front-panel push buttons. The front-panel display provides information on routing status. Removable input and output modules and dual (redundant) hot-swappable power supplies allow the Matrix to be used in the most demanding environments, offering maximum flexibility for all applications.

How It Works

The GefenPRO 32x32 DVI Matrix has 32 DVI inputs and 32 DVI outputs. Using DVI cables, connect 32 sources to the DVI input ports on the GefenPRO 32x32 DVI Matrix. Connect the GefenPRO 32x32 DVI Matrix's 32 DVI outputs to the monitors. Connect an Ethernet cable from the network to the RJ-45 connector to use the built-in IP interface to control routing, EDID, and other commands. Connect an RS-232 cable from an RS-232 control device to control the Matrix via RS-232. Plug in the power cord and power on the GefenPRO 32x32 DVI Matrix. The connected monitors will show video according to the routing selection.

READ THESE NOTES BEFORE INSTALLING OR OPERATING THE 32X32 DVI MATRIX

- There is no internal scaling in the 32x32 DVI Matrix. All of the attached monitors must be able to display the resolutions output by the source devices. For maximum compatibility it is recommended that only one compatible/common resolution be used by all of the source devices.
- Routing features can be accessed using the serial control interface or via Telnet. See page 26 for more information.

IMPORTANT: If the unit is installed in a closed or multi-rack assembly, do not block the ventilation holes of the enclosure.

NOTE: IP control via the built-in Web interface is not available at this time but will be implemented in a future release of the firmware.

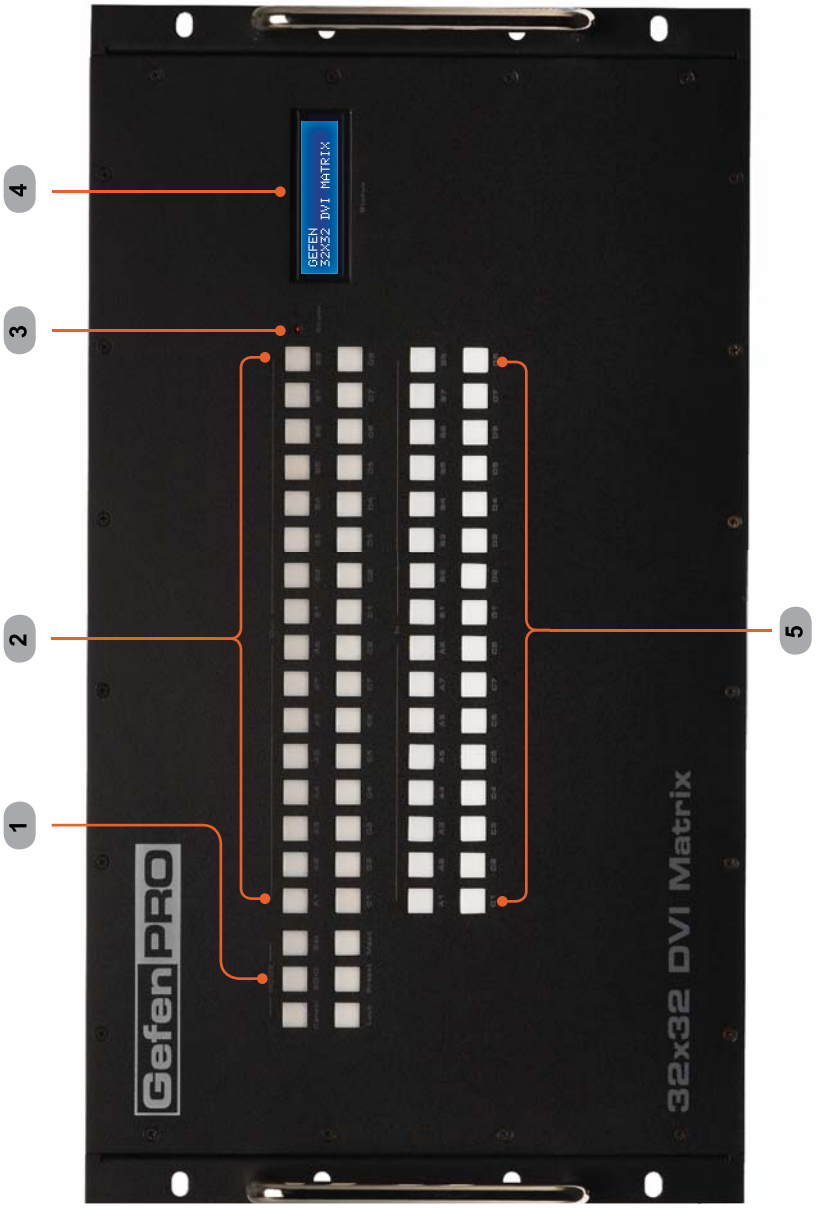
Features

- Combine 32 cross-platform computers and 32 digital displays
- Supports resolutions up to 1080p Full HD and 1920 x 1200
- Advanced EDID management permits upload of custom settings
- RS-232 Serial interface for remote control via a computer or control automation systems
- LCD status window
- Front-panel push buttons for local switching
- IP / Telnet Control with built-in Web server
- Routing states can be stored and recalled at the touch of a button
- Built-in dual (redundant) hot-swappable power supplies
- Output masking command
- Standby mode
- Grounding screw
- Fan module (optional)
- Filter module (optional)
- Power ON / OFF switch
- Supports DDWG standards for DVI
- Rack-mountable

Package Includes

(1) GefenPRO 32x32 DVI Matrix
(2) AC power cords
(1) Quick Start Guide

Front Panel



Front Panel

1 ***Mode Buttons***
These buttons are used to control other features on the product.
See pages 11 - 25 for more information.

2 ***Output Buttons (1 - 32)***
Used for routing an Input to an Output. Each of these buttons represents an Output. See page 11 for more information on routing DVI sources.

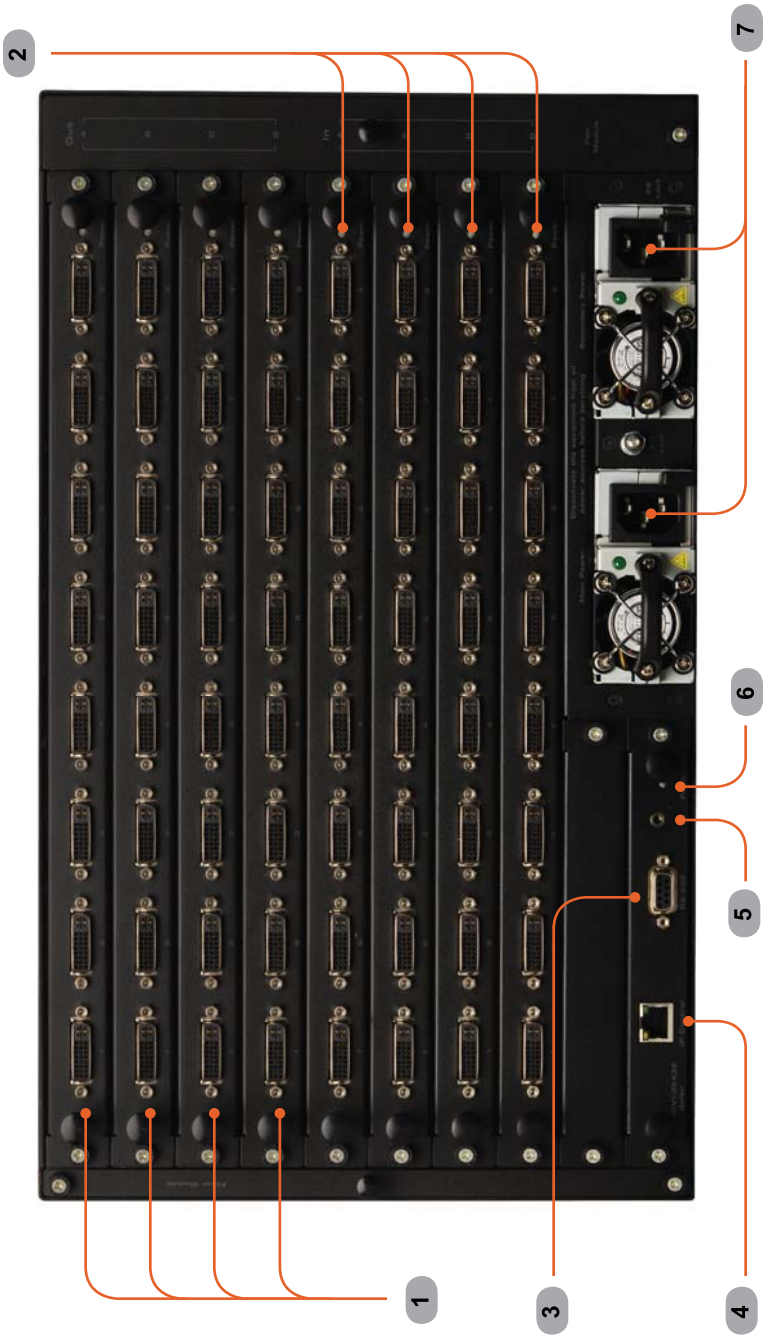
3 ***Power Indicator***
This LED indicator will glow red when the power is turned on.

4 ***LCD Display***
Displays the current routing status of the Matrix and is also used to manage source routing.

5 ***Input Buttons (1 - 32)***
Used for routing an Input to an Output. Each of these buttons represents an Input. See page 11 for more information on routing DVI sources.

BACK PANEL LAYOUT

Back Panel



Back Panel

1 ***Out (1 - 32)***
Connect DVI displays to these ports.

2 ***In (1 - 32)***
Connect computers or other DVI source devices to these ports.

3 ***RS-232 Serial Port***
Connects to the RS-232 control device. The 32x32 DVI Matrix may be switched remotely using this port. See page 26 for more information.

4 ***IP / Telnet Control***
Connect the 32x32 DVI Matrix to a network in order to use IP / Telnet control.

5 ***IR***
Connect an IR extender to this IR port.

6 ***Power***
This LED indicator glows bright red when the matrix is powered on.

7 ***Power Supply (1 - 2)***
Connect the included AC power cords from these receptacle to an available electrical outlet. The redundant (secondary) power cable should be connected to an electrical outlet on a different circuit. Each power supply is 110/220V AC.

How to Connect the 32x32 DVI Matrix

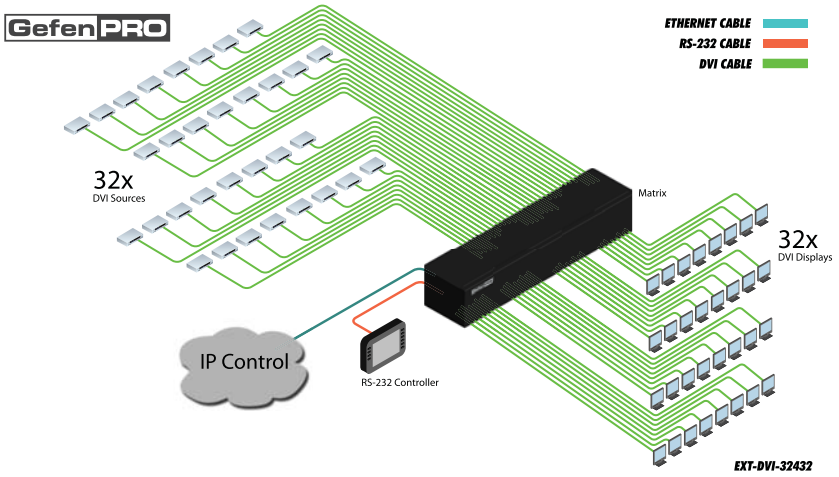
1. Connect up to 32 DVI source devices to the DVI inputs on the rear panel of the 32x32 DVI Matrix using DVI cables.
2. Connect up to 32 DVI displays to the DVI outputs on the rear panel of the 32x32 DVI Matrix.
3. Connect the included power cord to the power input receptacle on the rear panel of the 32x32 DVI Matrix. Connect the opposite end of the cable into a open wall power socket.

How to Operate the 32x32 DVI Matrix

The 32x32 DVI Matrix offers a number of control options. The following options can be used to control basic routing commands of the 32x32 DVI Matrix:

1. Front Panel Control Buttons - Pages 10 - 25.
2. RS-232 Commands - Pages 27 - 42.

Wiring Diagram for the GefenPRO 32x32 DVI Matrix



WARNING: This product should always be connected to a grounded electrical socket.

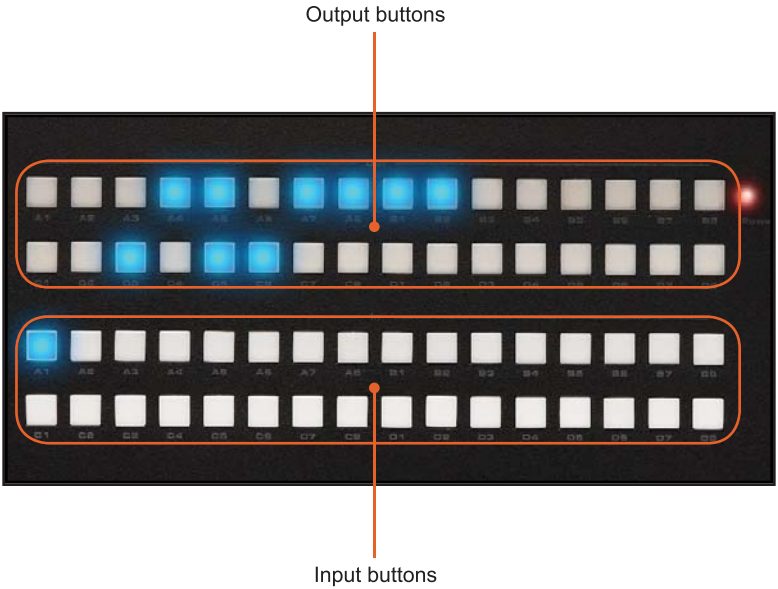
Booting Up / Standby Mode

The front-panel LCD of the 32x32 DVI Matrix is a 16 character 2 line display. This display is used to aid in performing routing commands, as well as displaying additional system information. When the unit is powered on, the following screens are displayed:

After a few moments, the Standby Mode screen is displayed:

Displaying the Current Routing State

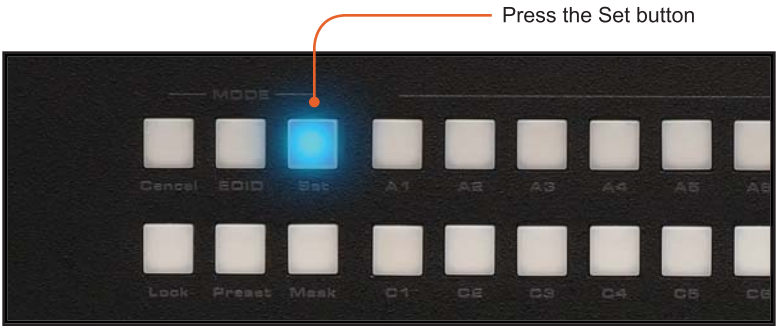
To display the current routing status of the Matrix, press any one of the Input or Output buttons on the front panel.



In the example above, Input A1 is routed to Output A4, Output A5, Output A7, Output A8, Output B1, Output B2, Output B3, Output C3, Output C5, and Output C6. A source does not need to be connected to the Matrix to display the current routing state. By default, all inputs are routed to their respective outputs (e.g. A1 - A1, A2 - A2, C3 - C3, D5 - D5, etc).

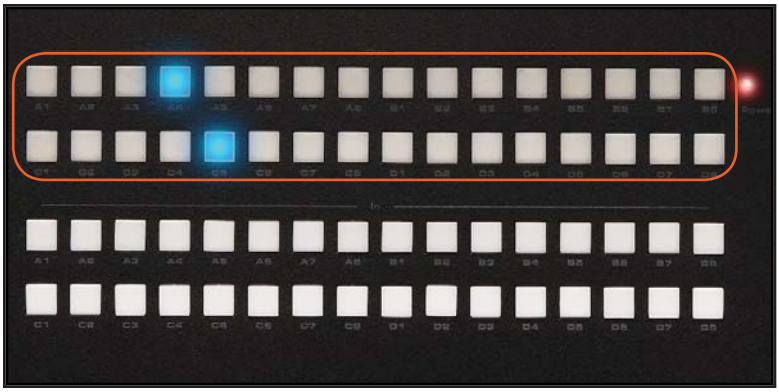
Routing Sources

1. To change the current routing state, press the Set button to activate Routing Mode.

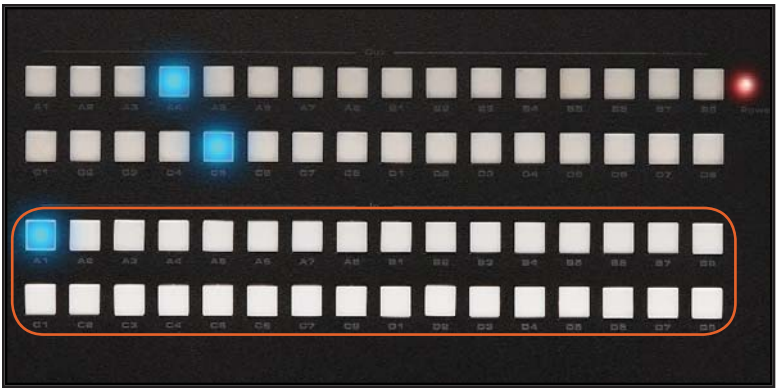


The front-panel LCD will indicate that Routing Mode has been selected:

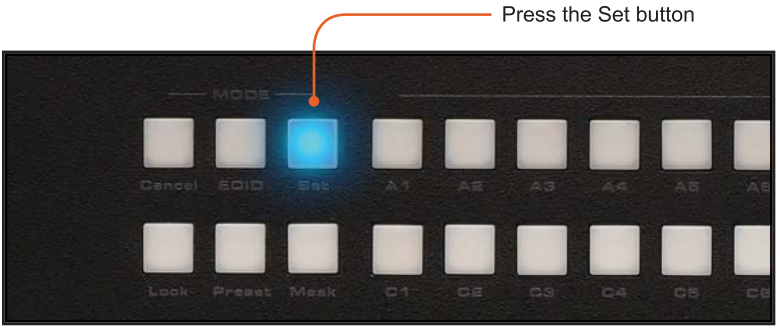
2. Press the desired Output button(s) from the top two rows of push-buttons. One or more Output buttons may be selected.



3. Select any Input from the bottom two rows of buttons (A1 - D8), corresponding to the source to be displayed on the output(s).



4. Press the Set button again to complete the operation.



The front-panel LCD display will indicate that the routing process is complete:

System Lock Mode

Locking the Matrix prevents changes to any of the Matrix settings. This feature is useful in case any of the front panel buttons are pressed by accident. Locking the Matrix also prevents changes using the IR Remote Control Unit.

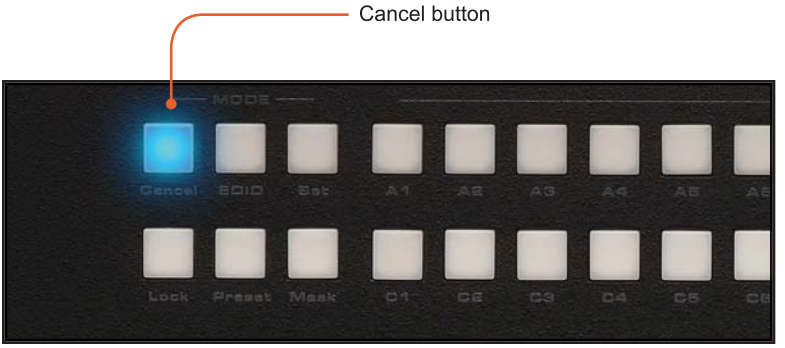
1. Press the Lock button to activate System Lock Mode.

The front-panel LCD screen will display the following while in System Lock Mode:

2. Press the Lock button a second time to deactivate System Lock Mode.

Cancelling a Function

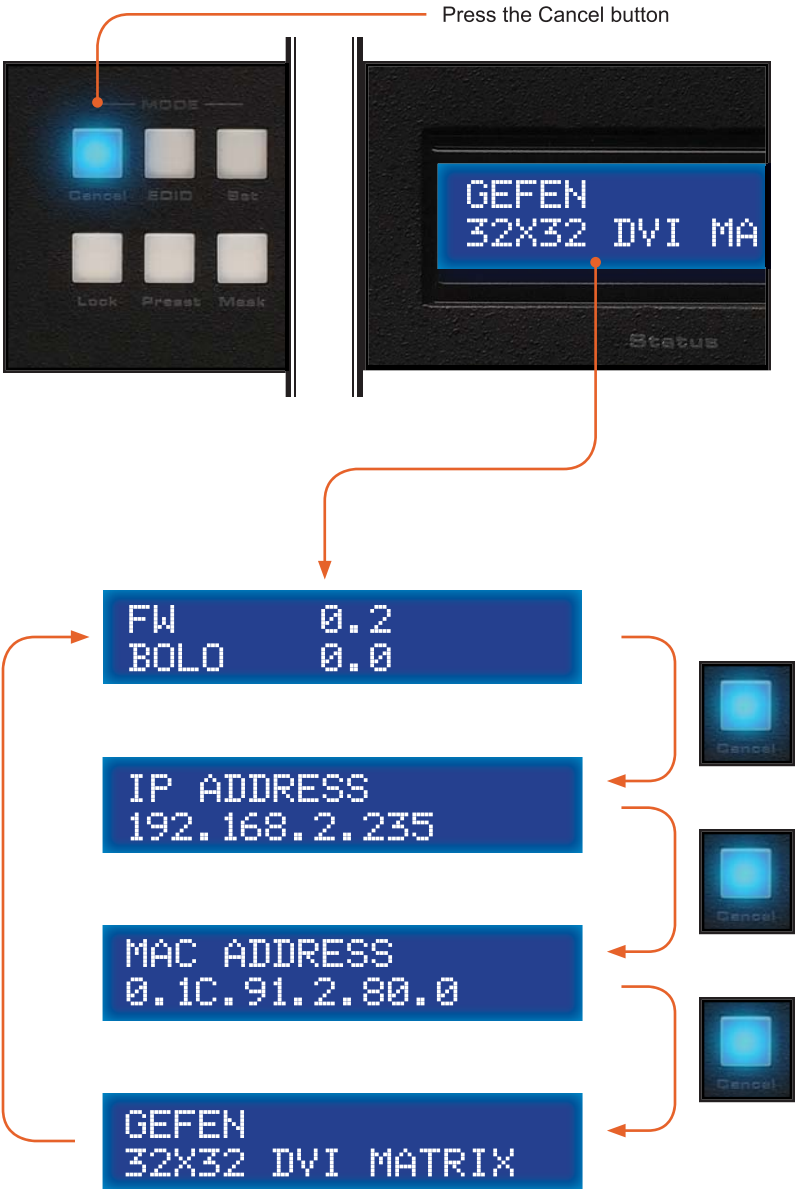
Press the Cancel button, while in any mode, to return to cancel the current function and display the Standby Mode screen.



The 32x32 DVI Matrix front-panel LCD screen as it appears in Standby mode:

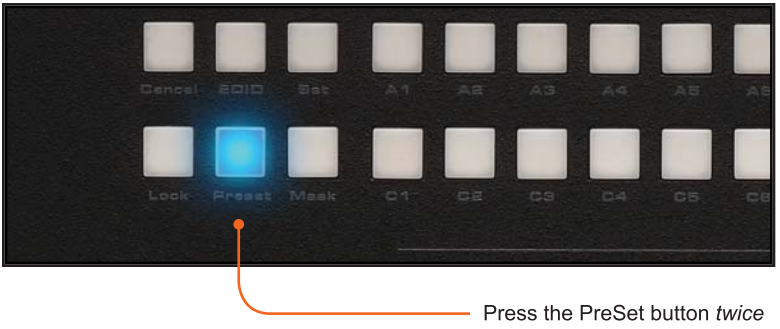
Cycling between Information Screens

Press the Cancel button more than once, while in Standby Mode, to cycle through each of the information screens:



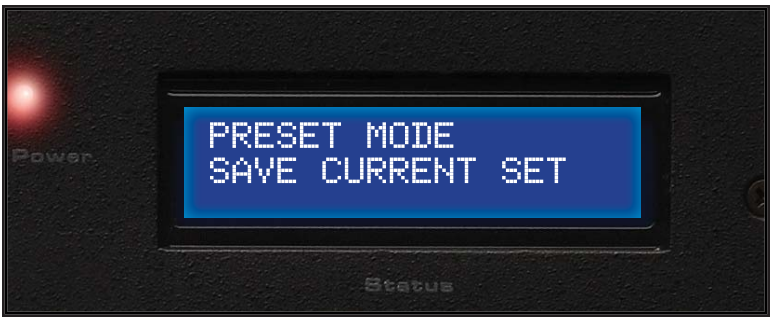
Saving the current Routing State

1. Set the routing state (see page 11), then press the PreSet button *twice* to activate Preset Mode.

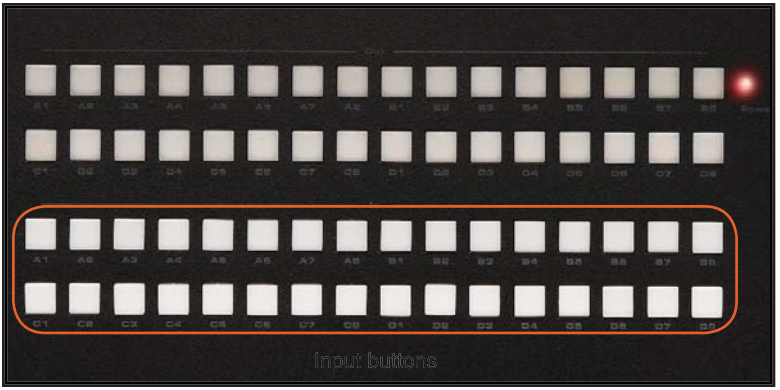


After pressing the PreSet button once, the following will be displayed on the front-panel LCD screen:

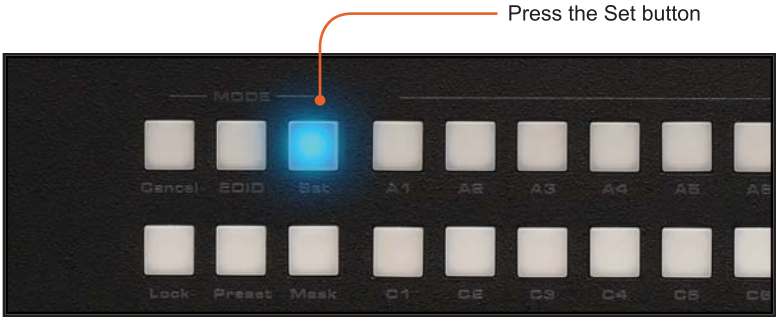
Press the PreSet button again. The following will be displayed on the front-panel LCD screen:



2. Press an Input button (A1 - D8) to store the current routing state.



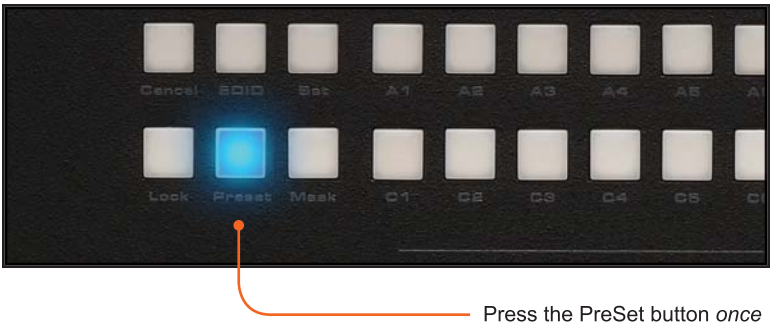
Press the Set button to complete the operation. The system will remain in Save Current Preset Mode.



The front-panel LCD screen will indicate that the current routing state has been saved:

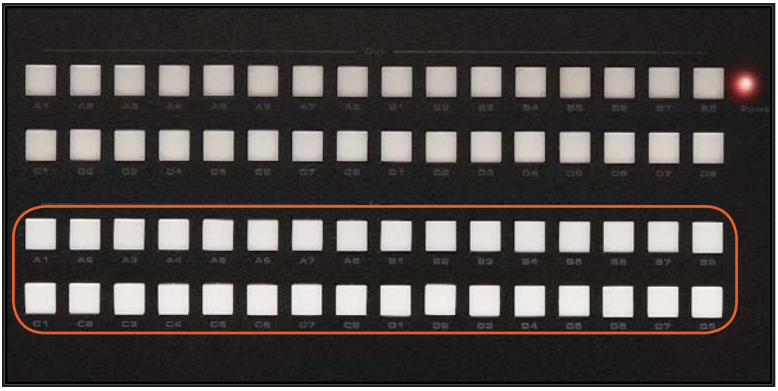
Recalling a stored Routing State

1. Press the PreSet button *once* to activate Recall Preset Mode.

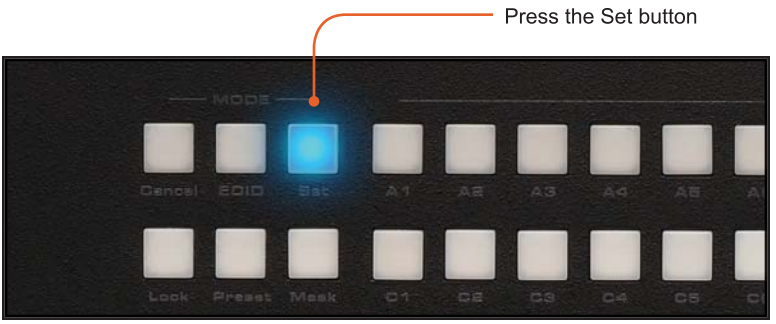


The following will be displayed on the front-panel LCD screen:

2. Press the Input button (A1 - D8) of the routing state to be recalled.



3. Press the Set button to complete the operation. The system will remain in Save Current Preset Mode.

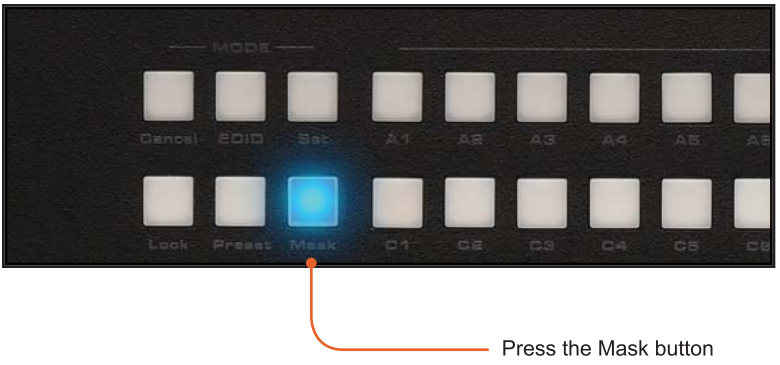


The front-panel LCD screen will indicate that the current routing state has been recalled:

Masking Outputs

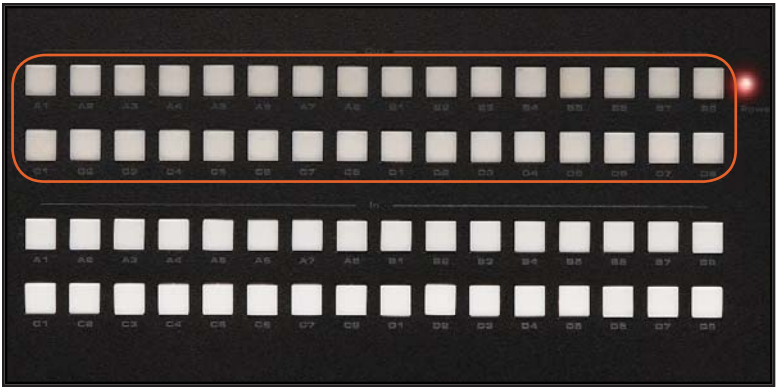
Masking prevents the output device (display, etc) from receiving an output signal, instead of powering-down the output device. The masking process is identical for masking or unmasking outputs.

Press the Mask button to activate Mask Mode.

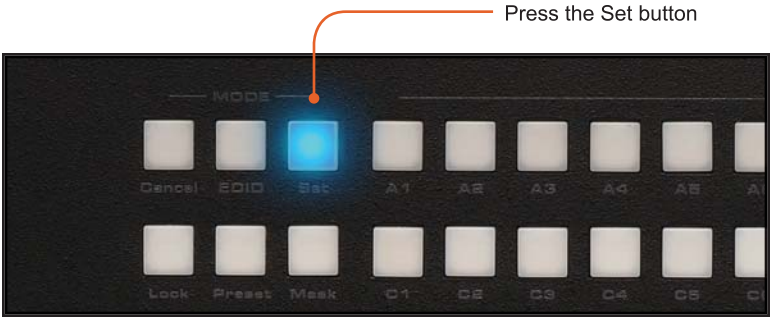


The front-panel LCD screen will indicate that the 32x32 DVI Matrix is in Mask Mode:

2. Select the Output (A1 - D8) to be masked:



Press the Set button to complete the operation.



The front-panel LCD screen will indicate that the selected output has been masked:

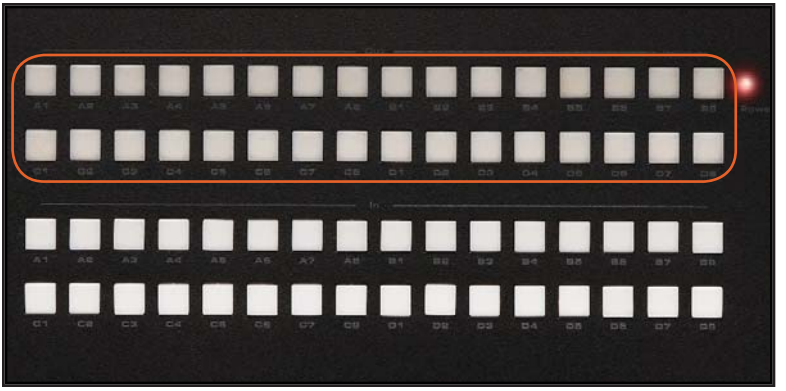
EDID Management

Saving the Downstream EDID data to Local memory:

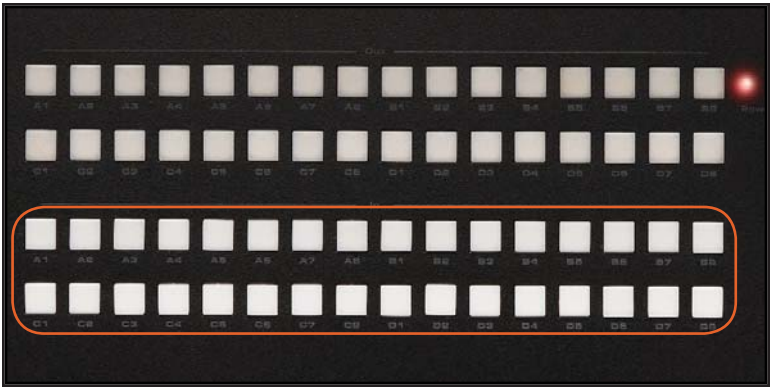
1. Press EDID button once to activate DSTOLO (Downstream To Local) Mode.

The front-panel LCD display will show the following:

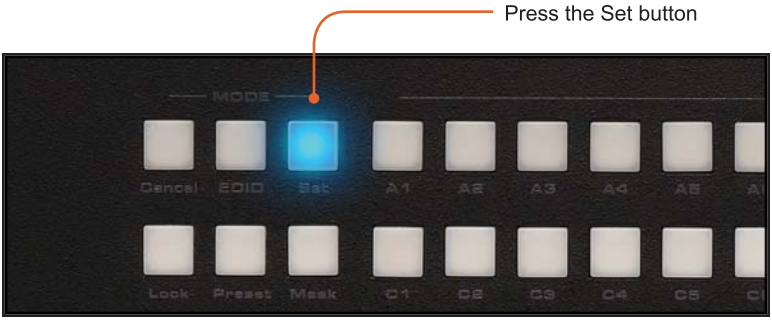
2. Press any Output button (A1 - D8) to select the EDID data source:



3. Press any Input button (A1 - D8) to select the EDID data destination:



4. Press the Set button to complete the operation.

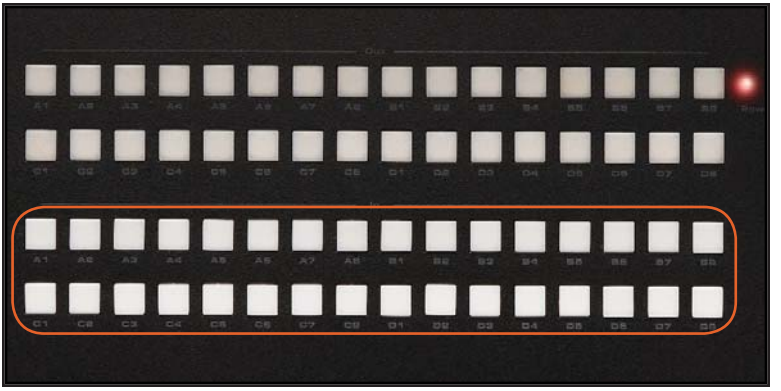


Saving the Default EDID data to Local memory

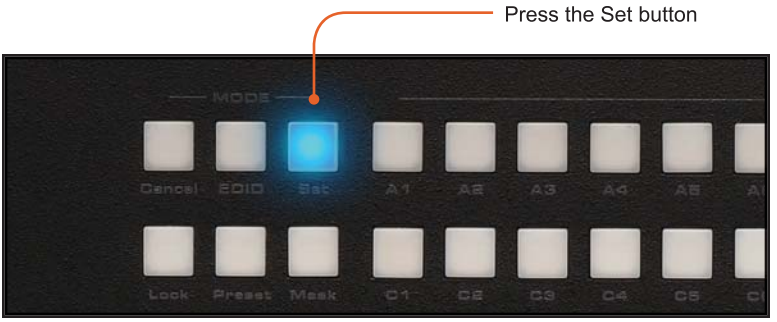
Press the EDID button twice to activate DETOLO (Default To Local) Mode.

The front-panel LCD will display the following:

2. Press any Input button(s) (A1 - D8) to select the EDID data destination(s).



3. Press the Set button to copy the default EDID to the selected Input.



The front-panel LCD will indicate that the EDID is being copied:

After a few moments, front-panel LCD will indicate that the EDID copy process was completed:

Only Pins 2 (RX), 3 (TX), and 5 (Ground) are used on the RS-232 serial interface

RS232 Settings

Bits per second 19200
Data bits 8
Parity ..... None
Stop bits 1
Flow Control ..... None

Telnet Settings

Refresh your Web browser and go to `http://192.168.1.72` to open the built-in Web Server. Consult the network administrator to obtain the proper IP address and settings for this product to properly communicate on the network.

The GefenPRO 32x32 DVI Matrix supports IP-based Telnet control. To access this feature, an IP address and a port number needs to be set on the 32x32 DVI Matrix. The default settings are:

IP Address: `192.168.1.72`
Port: `23`

IMPORTANT: When sending RS-232 commands, a *carriage return* and a *line feed* character must be included at the end of each line. Telnet / Command Names are case-sensitive.

NOTE: The return value will be displayed when using a terminal-based application, indicating the current value after executing the command.

EDID Management

Command	Description
#edidbatolo	Read downstream EDID and stores in any Local Input
#ediddetolo	Set to default EDID on Local Input
#ediddstoba	Read downstream EDID and stores in EDID Bank
#ediddstolo	Read downstream EDID and stores into a Local EDID
#lockedid	Locks Local EDID and disables auto-loading after power-up
#prbaedid	Read downstream EDID from bank and sends to serial port
#prdsedid	Read downstream EDID and sends to serial port
#predidst	Spools the EDID details to the serial port
#prloedid	Read Input Local EDID and sends to serial port

#edidbatolo Command

The #edidbatolo command reads an EDID from an EDID bank and stores it to any local input.

Syntax:

```
#edidbatolo param1 param2 param3...param9
```

Parameters:

param1	EDID bank offset	[1 - 20]
param2	Input list	[0 - 32]
param3 - 9 (optional)	Input list	[1 - 32]

Notes:

By specifying zero as the second parameter, the EDID in the specified bank is copied to all 32 DVI inputs. If more than eight inputs need to be specified in order to receive the EDID in the specified bank, the `#edidbatolo` command must be executed twice.

Example 1:

```
#edidbatolo 5 2 3 4 5 6 7 8 9 10 11 12   not permitted!
```

Command must be run twice:

```
#edidbatolo 5 2 3 4 5 6 7 8 9            max 8 inputs
#edidbatolo 5 11 12 13                   remaining inputs
```

Example 2:

```
#edidbatolo 1 0                          bank 1 copied to
                                         all local inputs
```

#ediddetolo Command

The #ediddetolo command stores the Default EDID in any Local EDID.

Syntax:

```
#ediddetolo param1 param2 param3...param9
```

Parameters:

param1	Input list	[0 - 32]
param2 - 9 (optional)	Input list	[1 - 32]

Notes:

By specifying 0 for *param1*, all inputs will receive the Default EDID or use *param1* **-** *param9* to specify individual local inputs which will receive the Default EDID.

Examples:

Examples:

```
#ediddetolo 5 2 3 4 5 6 7 8 9 10 11 12   not permitted!
```

Command must be run twice:

```
#ediddetolo 2 3 4 5 6 7 8 9              max 8 inputs
#ediddetolo 10 11 12 13                  remaining inputs

#ediddetolo 0                            stores default EDID
                                         to all inputs
```

#ediddstoba Command

The #ediddstoba command reads the downstream EDID and stores it to a specified EDID bank.

Syntax:

```
#ediddstoba param1 param2
```

Parameters:

param1	A downstream display	[1 - 32]
param2	EDID bank offset	[1 - 20]

#ediddstolo Command

The #ediddstolo command reads the downstream EDID and stores it to a Local EDID.

Syntax:

```
#ediddstolo param1 param2 param3...param9
```

Parameters:

param1	A downstream display	[1 - 32]
param2	Input list	[0 - 32]
param3 - 9 (optional)	Input list	[1 - 32]

Notes:

By specifying zero as the second parameter, the downstream EDID is stored to all 32 DVI inputs. If more than eight inputs need to be specified in order to receive the downstream EDID, the `#EDIDSDTOLO` command must be executed twice:

Example:

```
#ediddstolo 2 1 2 3 4 5 6 7 8 9 10 11   not permitted!
```

Instead, this command must be run twice:

```
#ediddstolo 2 1 2 3 4 5 6 7 8           max 8 inputs!
#ediddstolo 2 9 10 11                   remaining inputs
```

#lockedid Command

The #lockedid command secures the Local EDID and disables the automatic loading after power-up.

Syntax:

```
#lockedid param1
```

Parameters:

param1 EDID lock state [0 - 1]

Value	Meaning
0	Disable
1	Enable

#prbaedid Command

The #prbaedid command reads the EDID file from the specified bank and sends it to the serial port.

Syntax:

```
#prbaedid param1
```

Parameters:

param1 Bank [1 - 20]

#prdsedid Command

The #prdsedid command reads the downstream EDID and sends it to the serial port.

Syntax:

```
#prdsedid param1
```

Parameters:

param1 A downstream display [1 - 32]

#predidst Command

The #predidst command prints a table that contains details relating to the Local EDID source and the display name.

Syntax:

```
#predidst
```

Parameters:

None

#prloedid Command

The #prloedid command reads the local EDID of a specified input and spools it to the serial port.

Syntax:

```
#prloedid param1
```

Parameters:

param1	Input	[1 - 32]

IP Configuration

Command	Description
#ipconfig	Displays the current IP configuration
#rstip	Sets IP configuration to factory settings
#set_http_port	Sets the Port
#set_telnet_port	Sets the Telnet Port
#sgateway	Sets the Gateway
#sipadd	Sets the IP Address
#snetmask	Sets the Net Mask

#ipconfig Command

Prints the current IP configuration on the screen.

Syntax:

`#ipconfig`

Parameters:

None

#rstip Command

The #rstip command sets the current IP configuration to factory (default) settings.

Syntax:

`#rstip`

Parameters:

None

Notes:

A reboot is required after using this command.

#set_http_port Command

Specifies a new port. The underscore character ("_") must be included when typing the command name.

Syntax:

```
#set_http_port param1
```

Parameters:

param1	Port	[0 - 255]

Notes:

A reboot is required after using this command.

#set_telnet_port Command

Specifies a new Telnet listening port. The underscore character ("_") must be included when typing the command name.

Syntax:

```
#set_telnet_port param1
```

Parameters:

param1	Port	[0 - 255]

Notes:

A reboot is required after using this command.

#sgateway Command

Specifies the new IP gateway. The IP address must be typed using Dot-decimal notation.

Syntax:

```
#sgateway param1
```

Parameters:

param1	IP address

Example:

```
#sgateway 192.168.1.1
```

Notes:

A reboot is required after using this command.

#sipadd Command

The #sipadd command specifies a new IP address. The IP address must be typed using Dot-decimal notation.

Syntax:

```
#sipadd param1
```

Parameters:

param1	IP address

Syntax:

```
#sipadd 192.168.2.127
```

Notes:

A reboot is required after using this command.

#snetmask Command

The #snetmask command specifies a new net mask. The IP address must be typed using Dot-decimal notation.

Syntax:

```
#snetmask param1
```

Parameters:

param1	IP address

Example:

```
#snetmask 255.255.255.0
```

Notes:

A reboot is required after using this command.

General

Command	Description
#activebolo	Enables the boot loader
#callpreset	Recalls a specific preset routing state
#fadefault	Sets all routing states to default settings
#help	Displays a list of commands
#lockpower	Toggles the lock power state
#maskout	Blanks selected outputs
#savepreset	Saves the current routing state
#stbymode	Set system to Standby Mode

#activebolo Command

The #activebolo command enables the boot loader.

Syntax:

```
#activebolo
```

Parameters:

None

Notes:

This command must be typed twice in order to activate the boot loader.

#callpreset Command

Recalls a specific preset routing state.

Syntax:

```
#callpreset param1
```

Parameters:

param1	Port	[0 - 255]

Notes:

A reboot is required after using this command.

#fadefault Command

The #fadefault command will erase all local memory EDID banks, reset default routing, and clear all IP settings.

Syntax:

```
#fadefault
```

Parameters:

None

#help Command

The #help command displays help on the specified command. If *param1* is not included, then the full list of commands is displayed.

Syntax:

```
#help [param1]
```

Parameters:

param1	Command (optional)

Example:

```
#help #ediddetolo

Cmd #ediddetolo: Download default EDID to Locals EDID(0 All
inputs, 1-32 Input)
 e.g: #ediddetolo 5
```

#lockpower Command

The #lockpower enables/disables the power lock state. Enabling this feature will store the 5V status for each input prior to shutting the unit down. This preserves the 5V state when the unit is restarted.

Syntax:

```
#lockpower param1
```

Parameters:

param1 State [0 - 1]

Value	Meaning
0	Disable Power Lock
1	Enable Power Lock

#maskout Command

The #maskout command allows blanking of selected outputs.

Syntax:

```
#maskout param1 param2
```

Parameters:

param1 Output [1 - 32]

param2 Masking state [0 - 1]

Value	Meaning
0	Unmask
1	Mask

Notes:

The current masking state will be lost if the unit is rebooted or power is lost.

#savepreset Command

The #savepreset command saves the current routing state to memory.

Syntax:

```
#savepreset param1
```

Parameters:

param1	Input	[1 - 32]

#stbymode Command

The #stbymode places the Matrix in stand-by mode. Stand-by mode reduces power consumption.

Syntax:

```
#stbymode param1
```

Parameters:

param1 State [0 - 1]

Value	Meaning
0	Disable stand-by mode
1	Enable stand-by mode

Routing

Command	Description
f	Returns the state of pin 14 of the DVI inputs / Enables or disables +5V when using fiber optic extenders.
m	Returns the current routing status of matrix
r	Routing command
s	Routes a single input to all outputs

f Command

The F command returns the state of pin 14 of the DVI inputs.

Syntax:

```
f
```

Parameters:
None

Notes:

"High" is returned if +5V is enabled on the DVI input. "Low" is returned if +5V is disabled on the DVI input.

Using parameters with the **f Command**

Permits disabling / enabling of +5V for Fiber Optic Extenders.

Syntax:

```
f param1 param2
```

Parameters:

param1	DVI input	[1 - 32]
param2	State	[0 - 1]

Value	Meaning
0	Disable
1	Enable

Notes:

Setting *param1* to a value of 0 will apply the value of *param2* to all inputs.

m Command

The m command displays the current routing, masking, and HPD status of the matrix.

Syntax:

```
m
```

Parameters:

None

Example:

```
m
```

```
Routing status table
 Outputs | +0 | +1 | +2 | +3 | +4 | +5 | +6 | +7
    1    |  1 |  1 |  1 |  1 |  1 |  1 |  1 |  1
    9    |  1 |  1 |  1 |  1 |  1 |  1 |  1 |  1
   17    |  2 |  2 |  2 |  2 |  2 |  2 |  2 |  2
   25    |  2 |  2 |  2 |  2 |  2 |  2 |  2 |  2
Masking status table
 Outputs | +0 | +1 | +2 | +3 | +4 | +5 | +6 | +7
    1    |  A |  A |  A |  A |  A |  A |  A |  A
    9    |  A |  A |  A |  A |  A |  A |  A |  A
   17    |  A |  A |  A |  A |  A |  A |  A |  A
   25    |  A |  A |  A |  A |  A |  A |  A |  A
Monitor HPD status table
 Outputs | +0 | +1 | +2 | +3 | +4 | +5 | +6 | +7
    1    |  L |  L |  L |  L |  L |  L |  L |  L
    9    |  L |  L |  L |  L |  L |  L |  L |  L
   17    |  L |  L |  L |  L |  L |  L |  L |  L
   25    |  L |  L |  L |  L |  L |  L |  L |  L
```

r Command

The r command allows specific routing of inputs and outputs.

Syntax:

```
r param1 param2
```

Parameters:

param1	DVI Ouput	[1 - 32]
param2	DVI Input	[1 - 32]

Example:

Route Output 11 to Input 21

```
r 11 21
```

s Command

The s command routes a single input to all 32 DVI outputs.

Syntax:

```
s param1
```

Parameters:

param1	Input	[1 - 32]

Example:

Route all outputs to Input 28

```
s 28
```

Notes:

Setting *param1* to a value of 0 will place the matrix in *one-to-one mode*. This means that Input 1 will be routed to Output 1, Input 2 will be routed to Output 2, and so on.

a. Maximum recommended ambient temperature: 45 ˚C (104 ˚F).

b. Increase the air flow as needed to maintain the recommended temperature inside the rack.

c. Do not exceed maximum weight loads for the rack. Install heavier equipment in the lower part of the rack to maintain stability.

d. Connect a bonding wire between an approved safety ground and the grounding screw on the chassis.

SPECIFICATIONS

Maximum Pixel Clock .....165 MHz

Input Video Signal .....1.2 Volts p-p

Video Input Connectors..... (32) DVI-I 29-pin, female (digital only)

Video Output Connectors..... (32) DVI-I 29-pin, female (digital only)

IR Extender.....3.5 mm mini-stereo

Ethernet (IP control) port.....RJ-45 jack (100BaseT)

USB port (firmware updates).....Type B

RS-232 Interface.....DB-9 serial, female

Power Supplies.....(2) 100 - 240V AC (hot-swappable)

Power Consumption .....120 Watts (max)

Rack-mountable ..... 6U rack space, rack ears included

Dimensions .....17.25” W x 10.5” H x 12” D

Shipping Weight .....40 lbs.

Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.

2. Customers outside the US are responsible for shipping charges to and from Gefen.

3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

For the latest warranty coverage information, refer to the Warranty and Return Policy under the Support section of the Gefen Web site at www.gefen.com.

PRODUCT REGISTRATION

Please register your product online by visiting the Register Product page under the Support section of the Gefen Web site.

lwIP is licenced under the BSD licence:

Copyright (c) 2001-2004 Swedish Institute of Computer Science.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Rev A2

20600 Nordhoff St., Chatsworth CA 91311

1-800-545-6900 818-772-9100 fax: 818-772-9120

www.gefenpro.com support@gefenpro.com